

## REMARKS

In the September 9, 2005 Office Action, claims 1, 3 and 6-18 are rejected under 35 U.S.C. Section 112. In this Response, claims 10-11 are canceled, independent claims 1, 14, 15 and 17 are amended and remarks are provided.

Pending claims 1, 3 and 6-18 were rejected on the ground that the amendment thereto in the last Response regarding first and second frequencies was not described in the written description and/or was not enabled. In response, the independent claims have been amended herein by deleting the different frequencies, and have otherwise been amended to improve their clarity.

Amended claim 1 herein recites "an input port, which is connected to a first optical fiber" and "said nonlinear optical medium includes a second optical fiber to which said signal light of said input port is inputted from said optical loop, and said continuous wave having said wavelength  $\lambda_c$  is inputted from said optical loop and performs amplitude modulation of said continuous wave by said signal light to obtain light having said wavelength  $\lambda_c$  by four-wave mixing using said signal light as pump light...". (Emphasis supplied). Support for this amendment can be found at, e.g., page 4, lines 15-20, page 8, lines 10-11, page 9, lines 13-24, page 10, lines 2-24.

Thus, with the present invention, the amplitude modulation of the continuous wave is directly performed by the nonlinear medium optical fiber using the signal light inputted thereto to obtain light having said wavelength  $\lambda_c$  by four wave mixing using the signal light as pump light.

Independent claims 14, 15 and 17 include similar limitations regarding the use of the signal light in the amplitude modulation. In claims 14-15, however, first and second optical fibers are recited in the optical system, in addition to a third optical fiber of the nonlinear medium. Also, in claim 17, the method claim, there is recited a first optical fiber into which the signal light is introduced.

It is respectfully submitted that claims 1, 3, 6-9 and 12-18 fully comply with 35 U.S.C. § 112.

Not only is it believed that the Section 112 rejection has been overcome by these amendments, but it is respectfully submitted that the cited prior art fails to teach or disclose the amended claims.

That is, Bigo fails to disclose amplitude modulation of the continuous wave performed directly by using the signal light as recited in these independent claims.

Watanabe '667 discloses "modulation means 51 for modulating pump light in accordance with input data" in col. 9, lines 38-39. The input data is not a light signal, but is an electrical signal. Accordingly, Watanabe '667 fails to disclose that the amplitude modulation of the continuous wave is directly performed by the signal light which is input to the nonlinear optical medium. That is, Watanabe '667 discloses the amplitude modulation by four-wave mixing using a signal light as pump light, but fails to disclose directly performing the amplitude modulation by the signal light inputted to the nonlinear optical medium and generating pulses including the wavelength  $\lambda_c$  without opto/electric conversion.

One of ordinary skill in the art would not have been motivated to apply Watanabe '667 to Bigo because Watanabe '667 fails to disclose directly performing the amplitude modulation by the signal light inputted to the nonlinear optical medium and generating pulses including the wavelength  $\lambda_c$  without opto/electric conversion.

#### CONCLUSION

In light of the above amendments and remarks, it is respectfully submitted that claims 1, 3, 6-9 and 12-18 are now in condition for allowance.

If there are any additional fees associated with this Response, please charge same to our Deposit Account No. 19-3935.

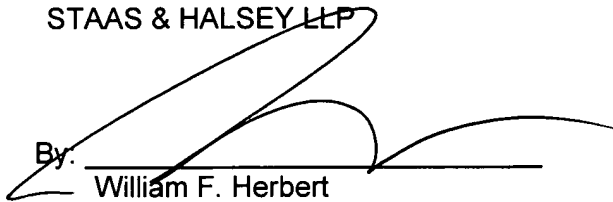
Respectfully submitted,

STAAS & HALSEY LLP

Date: \_\_\_\_\_

12/9/05

By: \_\_\_\_\_



William F. Herbert  
Registration No. 31,024

1201 New York Avenue, NW, Suite 700  
Washington, D.C. 20005  
Telephone: (202) 434-1500  
Facsimile: (202) 434-1501